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ABSTRACT

The differences in California Achievement Test (CAT) scores from 1990 to 1991 in seventh graders, currently enrolled in Albritton Junior High School in the Fort Bragg Schools, of deployed and nondeployed fathers were analyzed. CAT percentile scores from 1990 and 1991 (1991 being the year of "Desert Storm") were obtained in reading, math and language for 158 children (82 females and 76 males). A questionnaire was completed by the parents which identified those students who had a parent deployed to the Middle East for Operation Desert Storm. The results showed a decrease in the average reading score for females of both deployed and nondeployed parents from 1990 to 1991. A statistically significant decrease was noted in average reading scores for the females of deployed fathers; however, there was no statistically significant difference in CAT scores for any other area among males or females. A figure and a table present data and statistical analysis. (Contains 19 references.) (Author/TS)

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Implications of Deployed and Nondeployed Fathers on Seventh Graders' California Achievement Test Scores During a Military Crisis

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Abstract

The differences in California Achievement Test (CAT) scores from 1990 to 1991 in seventh graders of deployed and nondeployed fathers were analyzed. CAT percentile scores from 1990 and 1991 (1991 being the year of Desert Storm) were obtained in reading, math and language for 158 children (82 females and 76 males). A questionnaire developed by the author was completed by the parents and identified those students who had a parent deployed to the Middle East for Operation Desert Storm. The results showed a decrease in the average reading score for females of both deployed and nondeployed parents from 1990 to 1991. A statistically significant decrease was noted in average reading scores for the females of deployed fathers; however, there was no statistically significant difference in CAT scores for any other area among males or females.

Implications of Deployed and Nondeployed Fathers on Seventh Graders' California Achievement Test Scores During a Military Crisis

Introduction

Since the Vietnam war, the psychosocial risks associated with military service have received increasing attention by researchers (Jansen, Lewis and Xenakis, 1986). With the conclusion of Operation Desert Storm in 1991, educators have raised questions similar to those raised in 1942 (Bender & Frosch, 1942): what effects if any has the war had on our children?

War and the Effects on Children in School

The importance of the school, considerable as it is in peace, becomes paramount in wartime (Despert, 1942). Literature during the 1990's has been replete emphasizing this importance with the media focus on Operation Desert Shield/Storm. Despert (1942) noted that in England the closing of schools was recognized as an unwise move, since it resulted in increased juvenile delinquency and the breaking down of morale. Teachers at that time not only continued to function as educators and morale builders, they also participated in the many investigations carried out in schools, reception centers and foster homes. Such investigations were aimed at gaining insight into the problems of children in wartime.

The reactions of some American children to WWII were compiled in a report

presented by the Payne Whitney School of New York Hospital after questioning parents of 144 children. The principle manifestations of anxiety aroused by WWII in the Payne Whitney Nursery School Study of Children's Reactions to the War were: clinging to the mother, excessive concern over the war (associated with repetitive questioning), mildly compulsive behavior, night terrors, increased motor activity/restlessness, irritability, apprehensiveness about unfamiliar activities, feeding problems and vomiting.

Schwebel (1982) reviewed studies of students from second grade through college and found the threat of war has been a possible contributor to an increase in family disruption, drug abuse, and heightened loneliness. Young people, Schwebel suggests, often use denial because the situation of war is too terrible to contemplate. When they do think about it, children feel anxious, resentful and helpless.

The Effects of War and Separation of Families

Despite the significant history of war experienced by families of the United States (especially World War II), there were only two major systematic studies of families' reactions to separation and reunion (Boulding, 1950; Hill, 1949). In a particularly impressive study for its time, Hill interviewed 135 spouses about their own and their children's adjustment to the absence of the father. Hill was first to observe what was repeatedly seen in the first 100 days of Operation Desert Storm, namely that wartime separation causes families to establish new routines and new roles such as the mother becoming the head of the household in the father's absence and assuming family duties alone. Both Hill and Boulding also reported that reunion adjustment is poor for families

with larger numbers of children, those who had limited contact with friends and relatives, and those who had experienced separation in the past.

Findings from military literature show that separations of even a year or less have been associated with familial emotional and behavioral problems, especially among young male children (Jensen, Lewis & Xenakis, 1986). Hillenbrand (1976) found that increasing length of absences was associated with generally positive effects for oldest sons, but resulted in increased aggression and dependency for those boys with older siblings (especially older sisters). Absence generally had no apparent effects on girls.

The Effects of Father Absence on Children's Test Scores

Some evidence suggests the intriguing possibility that father absences can be associated with some positive effects. Lessin, Zargorin, and Nelson (1970) administered the Wechsler Intelligence Scale for Children to a large number of school-aged boys and girls. Their father-absent middle-class subjects scored significantly higher on comprehension, vocabulary and mean verbal IQ. (However, father-absent children earned a significantly lower performance scale IQ and father-absent boys were lower in arithmetic.)

Father absence is related to lower scores on intelligence and achievement tests (Deutsch & Brown, 1964; Santrock, 1972; Sutton-Smith, Rosenburg, & Landy, 1968). Some evidence suggests that father-absence mediates cognitive effects on children. Few studies have examined this question with regard to military children, but a review of 54 studies on the cognitive effects of father absence in nonmilitary settings indicates

significant decreases in IQ and school achievement (Shinn, 1973). The effects of father absence on children's cognitive development remains contested. A review of research prior to 1969 from E. Herzog and Sudia (1973) concluded that the father's absence from the home makes no difference to the child's school achievement. With respect to effects of military-related father absence, review of the four available studies suggests that increasing length of father absence due to military assignment and earlier child's age at absence onset result in higher verbal than math scores on standardized achievement tests. These effects may be mediated by the child's sex, ordinal position, and number of siblings (Carlsmith, 1964; Funkenstein, 1963; Hillenbrand, 1976; Oshman, 1975).

The purpose of the current research is to determine whether there was a significant difference between 1990 and 1991 (the year of Operation Desert Shield/Storm) mean California Achievement Test scores in the Fort Bragg Schools' seventh grade students of deployed and nondeployed fathers.

Method

Subjects

Seventh grade students currently enrolled in Albritton Junior High School in the Fort Bragg Schools who were administered the California Achievement Test for the past two years served as subjects for the current study. This population yielded an N=158.

Instrument

The California Achievement Test (CAT) are a series of test batteries that combine

norm-referenced and criterion-referenced tests published and normed in 1985. This combination provides information about the relative ranking of an individual student against the performance of students across the United States. CAT measures the achievement in prereading, reading, spelling, language, mathematics and reference skills of students from kindergarten through twelfth grade, with 11 levels available.

Another instrument used to gather data was a questionnaire provided to the parents of the seventh graders asking when and for how long either or both parent/guardians were deployed to Desert Storm. The questionnaire asked for the number of children in the family and the birth order number of the seventh grader. On the opposite side of the questionnaire was a cover letter addressed to the parent describing the purpose of the study and the need for their participation. Confidentiality was explained as was the fact that parents would receive results following the completion of the study. For all children whose CAT scores were available for sixth and seventh grade and whose questionnaires were returned, the father was noted as either a deployed or nondeployed parent.

A Paired Differences T-test was employed to investigate the mean differences from zero between pre and post gulf war CAT scores with a Bonferoni Correction implemented in the statistical procedure.

Procedure

California Achievement Test percentiles in reading, math, language and total battery from 1990 and 1991 were obtained for all currently enrolled seventh graders in Albritton Junior High School in the Fort Bragg Schools, Fort Bragg, North Carolina.

The researcher met with the superintendent, PTA and seventh grade teachers to review procedures and receive suggestions. Teachers disseminated surveys to students and collected completed surveys from students at a rate of 77% two days later. Survey data was paired with CAT data respectively. Children for whom both sets of data were available were used in the study. Females were divided into two groups: those with deployed father N=57 and those with nondeployed father N=25. Males were divided into two groups: those with deployed father N=45 and those with nondeployed father N=31.

Results

A Paired Differences Independent T-test was run to determine significant differences in CAT scores between 1990 and 1991. A significant difference was noted in females of deployed fathers in the area of reading with their average percentile in 1991 (54.96) falling significantly lower than their average percentile in 1990 (58.84), $p<0.004$. There was no significant difference in CAT scores noted from 1990 to 1991 in children of either deployed or nondeployed fathers in the areas of math or language (see Figure 1).

Insert Figure 1 about here

Averages, standard deviations, minimum scores and maximum scores were listed (see Table 1).

Insert Table 1 about here

Discussion

The findings of the current study were that the 1991 CAT scores (the year of Desert Storm) for the seventh graders of the Fort Bragg Schools were generally unaffected when compared to their scores from the previous year. Another finding, although not significant, was that both groups of girls scored lower in reading from 1990 to 1991. The girls of deployed fathers, however, scored significantly lower (<0.004). A Bonferoni Correction power procedure was employed with the calculations.

Operation Desert Shield/Storm created much stress in nondeployed spouses and their children. In some installations, such as Fort Bragg, the children were asked to continue their educational routines (including standardized testing). The school administration, after thorough consideration of the possibility to postpone, decided the students should be given the CAT. Concern was expressed regarding the stressful effects of the war on the children's test results, such as invalid results due to mental distractions caused by concern for the deployed father's life and the magnified tension in the homes of the children whose parent was deployed. Some seventh graders in the Fort Bragg Schools were "scared" that the United States would lose the war in the Gulf and

wondered about the future of the country, according to one sixth grade social studies teacher who allowed time each day for the students to talk about the war if they wanted.

Numerous mediating variable could be proposed to explain the significant reduction in reading scores from 1990 to 1991 for females of nondeployed parents. Perhaps the reduction in quality and quantity of attention, not simply the presence of the father is especially important to the girls with a deployed parent. The lack of a father figure in the home may have lowered the girl's self-esteem and disrupted their performance in reading. Biller (1974) reviewed studies showing that "inadequate fathering" was frequent in the families of academic underachievers. Current results contradict a finding from Maccoby and Rau (1962) which suggests that father-absent children are under a great deal of stress and that stress and tension interfere more with mathematical than with verbal activities because the former requires a higher level of ego functioning. Since most reading is done at home, reading may be weaker due to stress of the changed family dynamics and significant circumstances. Compensation for the absence may be easier with boys than with girls.

Another interesting result found boys of nondeployed fathers increased their average score in language from 1990 to 1991. This finding is in support of Jaffe (1965) who found 8th grade boys of the father-present group to be superior in IQ. and grades. Father presence was also noted to be a factor correlating with high achievement in reading according to Peterson, DeBord, Peterson, & Livingston (1966). With their fathers home, perhaps the boys took advantage of the opportunity to communicate with their fathers regarding the war, where it was, what we were doing there and what could

happen. Letter writing was frequent in Fort Bragg during Operation Desert Storm, that also may have increased the language-arts skills of males.

One of the most important and revealing results from the current research is that most of the 1991 CAT scores were relatively unaffected by the war. Several possible reasons for the lack of decline in test scores may be proposed. The fact that the literature is not replete in regard to mental health service in this area caused professionals within the schools to rely on their Crisis Intervention Teams (CIT) to assist those students and faculty with emotional difficulties as needed. These teams included approximately 6 faculty members per school (psychologist, counselor, nurse, teachers, administrator) to serve members of their school with group counseling, one-on-one counseling and referring to outside agencies. Another reason for the lack of decline in test scores may be due to the resiliency of the staff and students who, having recently experienced Operation Just Cause, already had made contact with support groups and had firmly established coping mechanisms. Although conditions were not exactly the same as in Operation Desert Storm, Operation Just Cause found many men deployed and the threat of mass casualties probable. Military families frequently have a parent absent from the home due to military training periods or assignments in other countries. Certainly a family may never get used to such absences, which at times are without warning; yet the resiliency which these families have and which the school system has may be based on having experienced similar situations in the recent past. The mission in Haiti will again be a challenge for all non-deployed parents and the children. The

Crisis Intervention teams within the Fort Bragg Schools are preparing for action to serve those when needed.

Future research in this area should focus on families of National Guard soldiers and the effects on the scores of children with deployed parents. Particular attention should be placed on the type of military service the parent provides (i.e. cook, medical, artillery) assuming more stress is experienced with the more at-risk service.

In summation, the results suggest that the seventh grade children of the Fort Bragg Schools generally maintained consistent scores on the California Achievement Test before and during Operation Desert Storm. Only one group (girls of both deployed fathers) scored significantly lower in reading from 1990 to 1991, perhaps suggesting either a sex-linked oddity in the norming process or simply that sixth grade girls with a deployed father are at-risk in reading achievement during a time of military conflict.

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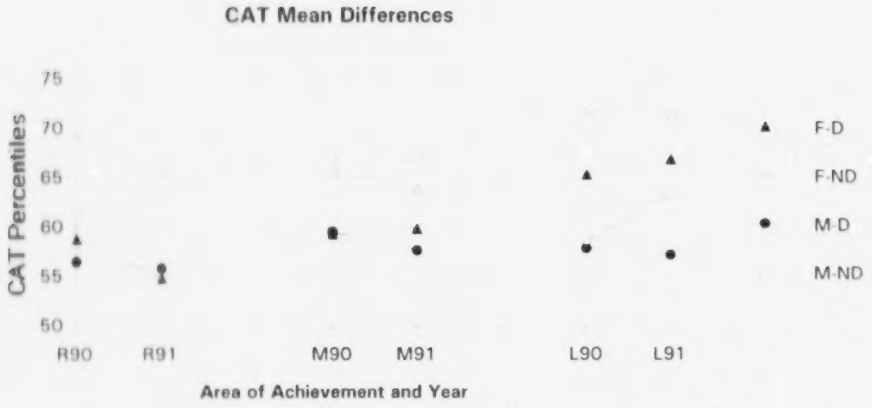

F-D = Females of Deployed Fathers
F-ND = Females of Nondeployed Fathers
M-D = Males of Deployed Fathers
M-ND = Males of Nondeployed Fathers
R90 R91 = Reading average percentile scores of 1990 or 1991
M90 M91 = Math average percentile scores of 1990 or 1991
L90 L91 = Language average percentile scores of 1990 or 1991

Table 1

Measure of Central Tendency for California Achievement Test Scores for 1990 and 1991

SUBJECT AND YEAR	SEX AND STATUS	N	MEAN	SD	MIN	MAX
R90	F-D	57	58.84	25.59	8	99
	F-ND	25	69.24	23.70	20	99
	M-D	45	56.51	24.12	8	99
	M-ND	31	61.48	20.48	27	99
M90	F-D	57	59.33	25.50	11	99
	F-ND	25	65.80	21.93	24	99
	M-D	45	59.53	24.29	22	99
	M-ND	31	67.06	22.99	27	99
L90	F-D	57	65.47	23.10	12	98
	F-ND	25	71.60	22.74	29	99
	M-D	45	57.95	26.26	10	99
	M-ND	31	58.67	25.31	24	98
		N	MEAN	SD	MIN	MAX
R91	F-D	57	54.96	23.19	6	98
	F-ND	25	65.48	23.94	22	99
	M-D	45	55.93	24.29	9	99
	M-ND	31	63.22	23.80	14	93
M91	F-D	57	59.89	23.08	19	99
	F-ND	25	63.84	22.97	25	98
	M-D	45	57.77	26.64	14	99
	M-ND	31	66.93	25.49	12	99
L91	F-D	57	66.84	21.21	17	99
	F-ND	25	71.44	26.11	21	99
	M-D	45	57.28	24.78	10	99
	M-ND	31	63.41	23.80	14	99

F-D = Females of Deployed Fathers
F-ND = Females of Nondeployed Fathers
M-D = Males of Deployed Fathers
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R90 R91 = Reading average percentile scores 1990 or 1991
M90 M91 = Math average percentile scores of 1990 or 1991
L90 L91 = Language average percentile scores of 1990 or 1991

Mean = Average Score
SD = Standard Deviation
Min = Minimum Score
Max = Maximum Score
N = Total Number Subjects

Figure Caption

Figure 1. California Achievement Test mean percentile differences